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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/091,838	03/06/2002	Dean C. Alberson	0455FV.45576	8562

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EXAMINER

FLANDRO, RYAN M

ART UNIT	PAPER NUMBER
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3679

DATE MAILED: 11/03/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/091,838

Applicant(s)

ALBERSON ET AL.

Examiner

Ryan M Flandro

Art Unit

3679

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 October 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-5,7-12 and 14-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3-5,7-12 and 14-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

Art Unit: 3679

DETAILED ACTION

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Response to Amendment

2. Applicant's request for reconsideration of the finality of the rejection of the last Office action, based on reference to MPEP §609, is persuasive and, therefore, the finality of that action is withdrawn.

Claim Rejections - 35 USC § 102

3. Claims 1, 4, 5, 7-12, 14-16, and 18-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Mileti (US 4,190,275).

a. Claim 1. Mileti shows and discloses a roadway crash cushion comprising a collapsible, substantially self-restoring collapsing portion **14,16,18, or 20** comprising a pair of substantially parallel panels **22** formed substantially of a thermoplastic material (see figures 5,6,8,9; column 1 lines 43-49; column 2 lines 26-61; column 4 lines 43-51), the panels being cambered by bending (see figures 5 and 6; column 2 lines 42-59).

Generally, something is considered "cambered" when it has a "slight convex curve of a surface."¹ Here, the panels **22** clearly have a cambered surface (forming cells **25,26**).

Further, "bending" is broadly defined as "to cause tension in; to force into a curved or

¹ Webster's New World Dictionary of the American Language, Second College Edition, ©1980.

crooked form.”² As such, Mileti is still believed to structurally read on the claim as amended.

b. Claim 4. Mileti further shows and discloses at least one substantially rectangular supporting frame **24 (or 60, 62, 64, 66, 68)** that is secured to each of the panels **22** (see figures 1-3, 8, and 9).

c. Claim 5. Mileti further shows and discloses a longitudinal, ground mounted rail member **86** and wherein the supporting frame **24 (or 60, 62, 64, 66, 68)** engages the rail member **86** (via element **80**) for longitudinal movement along the rail member **86** (see figures 8 and 9).

d. Claim 7. Mileti further shows and discloses a nose piece **40** (see figure 3).

e. Claim 8. Mileti clearly shows and discloses a roadway crash cushion comprising a collapsible cushion portion **14,16,18, or 20** having a cambered panel member **22** that collapsibly folds during a collision and, due to shape memory, will substantially return to an unfolded condition following a collision (see column 1 lines 43-49; column 2 lines 26-61; column 4 lines 43-51).

f. Claim 9. Mileti further shows and discloses a ground-mounted longitudinal basetrack **86**; a plurality of substantially rigid diaphragms **24 (or 60, 62, 64, 66, 68)** that are affixed to the panel member **22**, the diaphragms **24 (or 60, 62, 64, 66, 68)** each engaging the basetrack **86** (via **80**) for slidable movement thereupon (see figures 8 and 9).

² Id.

Note that the Examiner has broadly read the term diaphragm according to the following definition: “any membrane or partition that separates one thing from another.”³

g. Claim 10. Mileti further shows that the basetrack **86** comprises a pair of parallel rail members (see figures 8 and 9).

h. Claim 11. Mileti further each diaphragm **24 (or 60, 62, 64, 66, 68)** comprises an enlarged rectangular upper portion to which the panel members **22** are secured (see figures 8 and 9).

i. Claim 12. Mileti further shows and discloses each diaphragm **24 (or 60, 62, 64, 66, 68)** comprises a lower portion having a pair of shoes **80** for slidably engaging the rail members **86** (see figures 8 and 9).

j. Claim 13. The Examiner notes that claim 13 was cancelled in a previous amendment (paper no. 5). As such, it has not been treated here.

k. Claim 14. Mileti further shows and discloses a nose piece **40** formed of a sheet of plastic bent substantially into a “U” shape (see figure 3).

l. Claim 15. Mileti shows and discloses a roadway crash cushion comprising a longitudinal ground-mounted basetrack **86** that comprises a pair of parallel rail members (see figures 8 and 9); a pair of planar panel members **22** that are positioned parallel to one another and in a substantially vertical orientation, the panel members **22** each having a cambered portion **25,26** (see figures 5 and 6) wherein the panel member **22** is bent⁴ that promotes elastic deformation of the panel member **22** along the cambered portion **25,26**; a plurality of diaphragms **24 (or 60, 62, 64, 66, 68)** for securing the panel members **22** to

³ Id.

each other and to the basetrack **86**, the diaphragms **24 (or 60, 62, 64, 66, 68)** each comprising a pair of shoes **80** for sliding engagement of the diaphragm **24 (or 60, 62, 64, 66, 68)** to the basetrack rail members **86**; and a tension cable **34** (column 3 lines 4-9) affixed to at least one diaphragm **24 (or 60, 62, 64, 66, 68)** (see figures 2, 3, 5, 6, 8 and 9).

m. Claim 16. Mileti further shows and discloses that the panel members **22** and diaphragms **24 (or 60, 62, 64, 66, 68)** are secured to one another to form a linear array of closed crushable cells **14,16,18,20** (see figures 2, 3, 5, 6, 8, and 9).

n. Claim 18. Mileti further shows the cells **14,16,18,20** have different sizes to provide for separate collapsible zones within the array of cells **14,16,18,20** (see figures 2 and 3).

o. Claim 19. Mileti further shows the array of cells **14,16,18,20** has a pair of primary collapsible zones (**20** and **14**) located at upstream and downstream ends (respectively) of the array (see figures 2 and 3).

p. Claim 20. Mileti further shows the array of cells **14,16,18,20** has a secondary collapsible zone (**18** and **16**) located between the primary collapsible zones (**20** and **14**) (see figures 2 and 3).

Claim Rejections - 35 USC § 103

4. Claims 3 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mileti, as applied above, in view of McFadden et al (US 5,746,419) (McFadden).

⁴ Note that, as above, the Examiner has broadly interpreted the word “bent” to mean “to cause tension in; to force

a. Claim 3. As set forth above, Mileti discloses a thermoplastic material but lacks explicit disclosure that said material is polyethylene. McFadden clearly teaches that polyethylene is commonly used as a thermoplastic in the energy absorption art for its shape memory characteristics (see column 1 lines 25-29). Inasmuch as the references disclose these elements as art recognized equivalents, it would have been obvious to one of ordinary skill in the art to substitute one for the other. In re Fout, 675 F.2d 297, 301, 213 USPQ 532, 536 (CCPA 1982). Additionally, the Applicant is reminded that the selection of a known material based upon its suitability for the intended use is a design consideration within the skill of the art. In re Leshin, 227 F.2d 197, 125 USPQ 416 (CCPA 1960). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made modify the material of Mileti by providing polyethylene since polyethylene is a common thermoplastic used in energy absorption as taught by McFadden.

b. Claim 17. Also, Mileti further lacks a teaching that that the cells **14,16,18,20** are hexagonally shaped. McFadden, however, teaches that a hexagonal structure is advantageous for providing a high strength structure with good deflective characteristics (see column 3 lines 6-13). In any event, a change in the shape of a prior art device is a design consideration within the skill of the art. In re Dailey, 357 F.2d 669, 149 USPQ 47 (CCPA 1966). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made shape of the cells of Mileti by providing that they

be hexagonal in shape since such shape is common in energy absorption structures for providing good deflective characteristics as taught by McFadden.

Response to Arguments

5. Applicant's arguments, see paper no. 11, pages 5-6, filed 19 October 2003, with respect to the finality of the previous Office action have been fully considered and are persuasive. The finality of paper no. 10 has been withdrawn.

6. Applicant's arguments with respect to the amended claims in view of Mileti have been fully considered but they are not persuasive.

a. With regard to claim 1, Applicant's amendment adding the limitation "the panels being cambered by bending." As pointed out above, an object is considered "cambered" when it has a "slight convex curve of a surface." Here, the panels **22** clearly have a cambered surface (forming cells **25,26**). Further, "bending" is broadly defined as "to cause tension in; to force into a curved or crooked form." Structurally, the added limitations do not distinguish over Mileti. The Examiner also notes that the added language may be interpreted as a method of forming the cambered panels, i.e. by bending. This interpretation also fails to read over Mileti because the method of forming a device is not germane to the issue of patentability of the device itself. In this respect, "bending" would be given no patentable weight and the fact that Mileti shows the panels being cambered (internally at 25,26) satisfies the positive limitations in claim 1.

Applicant's argument that "it would not be obvious to one of skill in the art to

Art Unit: 3679

introduce a cambered bend into Mileti's panels" is also without merit for several reasons. First, in view of the rejection noted herein, claim 1 is rejected under 35 USC 102. As such, an argument against obviousness is irrelevant. Second, as set forth above, it is believed that Mileti does in fact include a cambered bend under a reasonably reading of the claim as amended.

Applicant's arguments directed to the fact that Mileti's panels are not intended to bend upon impact is also unpersuasive. Mileti's panels are clearly designed to bend upon impact. The panels 22 of Mileti are not designed to bow out laterally over the entire length of the panels, but the Examiner understands Mileti to bend functionally at the cambered portions of the panels.

These arguments are applicable to the language added to claim 15 as well.

b. With regard to claim 17, Applicant's argument against the combination of Mileti and McFadden is not persuasive. First, Applicant is misplaced in directing the Examiner's attention to the pyramidal cells 25,26 and Mileti's teaching that hexagonal cells are not desired. These "cells" are separate from cells **14,16,18,20** of Mileti which the Examiner has considered as corresponding to the cells recited in claims 16 and 17 (being formed by the panel members and the diaphragms). McFadden is cited to teach generally that a hexagonally shaped cell is advantageous for creating a strong structure with good deflective characteristics. This teaching was meant to apply to the overall shape of the composite cells **14,16,18,20**. Additionally, as noted in the previous rejection, a change in the shape of a prior art device is a design consideration within the skill of the art. In re Dailey, 357 F.2d 669, 149 USPQ 47 (CCPA 1966).

Art Unit: 3679

- c. Claim 13, indicated in the current amendment (paper no. 11) as being “previously presented,” was cancelled by a previous amendment (paper no. 5).

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following patents are cited to further show the state of the art with respect to roadway crash cushions:

U.S. Patent 6,116,805 to Gertz (see figure 13 showing cambered energy absorbing panels)

U.S. Patent 5,851,005 to Mullet et al. (see figures 1-3; cambered energy absorbing elements 27)

U.S. Patent 5,112,028 to Laturner (see figures 2, 3, 5, 6, 7, and 9; elastomeric cambered energy absorbing panels disposed substantially parallel to one another)

U.S. Patent 5,054,954 to Cobb et al. (see figures 1 and 2; cambered energy absorbing panels 14)

- 8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after

• Art Unit: 3679


• the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ryan M Flandro whose telephone number is (703) 305-6952. The examiner can normally be reached on 8:30am - 5:30pm Mon-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lynne H Browne can be reached on (703) 308-1159. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1113.

RMF


Lynne H. Browne
Supervisory Patent Examiner
Technology Center 3670